

REMARKS

Claims 8-16 were pending in this Application. Upon entry of this Amendment, Claims 8-16 will remain pending.

Applicants acknowledge with appreciation that Claims 9, 10, 12 and 13 were indicated in the Office Action to be allowable. Claims 9, 10 and 12 have been written in independent form as suggested by the Office Action and are believed to be in condition for allowance. Applicants believe Claim 13 is already in independent form, and is therefore ready for allowance without amendment.

Applicants have also written Claim 11 in independent form as well, believing it too is allowable for the reasons set forth below.

Claim 15 was rejected under 35 USC Section 112, first paragraph on the basis that the specification was not enabling for all pests. Applicants respectfully traverse and assert that the claims as filed were fully supported and allowable. However, to remove issues from the case and advance prosecution, Applicants have amended Claim 15 to specifically recite insects, arachnids and nematodes. Applicants believe they are entitled to a reasonable range of pests associated therewith under the doctrine of equivalents, at least, as where indicated in the Office Action, the biochemistries are the same or similar.

Claims 8, 11, 14 and 16 are rejected under 35 USC Section 103(a) as being unpatentable over Ishimitsu (WO 91/01978 A1).

The present claims specifically claim compounds with a methylene group linking R³. The use of such methylene group, however, renders the compounds which otherwise correspond to the ones shown in Ishimitsu et al., more effective, i.e. they show an unexpectedly superior insecticidal efficacy. This is demonstrated in the tests attached hereto as Enclosure 1 - wherein compound according to the prior art (Examples 421, 422 and a compound according to Ishimitsu et al.,) are compared. The comparison illustrates the difference of the ethylene linking chain with the methylene linking chain of the present invention.

The Example in Table E has been prepared and tested in order to demonstrate that the length of the linking chain is relevant also where R³ -S-Et instead of -O-Et and A is -N-C(CH₃)₂ instead of -N-CH₃.

As Ishimitsu et al are clearly focused on and limited to longer (e.g. ethylene) linking chains, and no teaching can be deduced from the reference which motivates

a person with skill in the art to use a methylene linking chain to improve the insecticidal activity. While such a person might expect to obtain compounds with an insecticidal activity, he or she could not expect to obtain compounds with an unexpectedly superior activity.

Applicants respectfully caution the Examiner about using hindsight to arrive at the present invention over Ishimitsu et al. Applicants respectfully assert that the Office Action has not established a prima facie case of obviousness for the reasons set forth above in terms of structural dissimilarity, and because there is no teaching, motivation or suggestion in either reference to select the methylene group of the present invention over the ethylene group of Ishimitsu et al., to arrive at the instantly claimed invention, and because it is only through impermissible hindsight using the Applicants' specification as a guide that one would be motivated to combine the references. (MPEP Section 2142 states that "the tendency to resort to "hindsight" based upon applicant's disclosures is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.")

As noted in MPEP Section 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed Cir 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed Cir. 1992).

Clearly, there is no such teaching, suggestion or motivation shown in Ishimitsu in this case. If the Examiner is relying on knowledge generally available to one of ordinary skill in the art, MPEP Section 2144.03 states that if Applicant traverses such an assertion, and Applicants do in this case, the Examiner should cite a reference in support of his or her position. Applicants hereby request such a reference. If the Examiner is relying on facts within his personal knowledge, Applicants respectfully request and are calling for, pursuant to MPEP Section 2144.03 and 37 C.F.R. Section 104, that the Examiner support such facts by an Affidavit.

Applicants' respectfully caution the Examiner about making conclusory statements not supported by objective evidence. As set forth in the case of *In re Lee*, 61 USPQ2d 1430 (CAFC January 18, 2002):

As applied to the determination of patentability *vel non* when the issue is obviousness, "it is fundamental that rejections under 35 U.S.C. §103 **must be based on evidence** comprehended by the language of that section." *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775(Fed. Cir. 1983). The essential factual evidence on the issue of obviousness is set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966) and extensive ensuing precedent. The patent examination process centers on prior art and the analysis thereof. When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. See, e.g., *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008(Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," a question of fact drawing on the *Graham* factors).

"The factual inquiry whether to combine references must be thorough and searching." *Id.* It must be based on objective evidence of record.

This precedent has been reinforced in myriad decisions, and cannot be dispensed with. See, e.g., *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an essential component of an obviousness holding") (quoting *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232(Fed. Cir. 1998)); *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617(Fed. Cir. 1999) (**"Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."**); *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637(Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600(Fed. Cir. 1988) ("teachings of references can be combined *only* if there is some suggestion or incentive to do so.") (emphasis in original) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933(Fed. Cir. 1984)).

The need for specificity pervades this authority. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317(Fed. Cir. 2000) (**"particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"**); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459(Fed. Cir. 1998) ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination.

In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.”); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783(Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination “only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references”).

[2] With respect to Lee's application, neither the examiner nor the Board adequately supported the selection and combination of the Nortrup and Thunderchopper references to render obvious that which Lee described. **The examiner's conclusory statements** that “the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software” and that “another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial” **do not adequately address the issue of motivation to combine. This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to “[use] that which the inventor taught against its teacher.” *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Thus the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion.**

....

Conclusory statements such as those here provided do not fulfill the agency's obligation. This court explained in *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697, that **“deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is ‘basic knowledge’ or ‘common sense.’”** The Board's findings must extend to all material facts and must be documented on the record, lest the “haze of so-called expertise” acquire insulation from accountability. “Common knowledge and common sense,” even if assumed to derive from the agency's expertise, do not substitute for authority when the law requires authority.

....

The determination of patentability on the ground of unobviousness is ultimately one of judgment. In furtherance of the judgmental process, the patent examination procedure serves both to find, and to place on the official record, that which has been considered with respect to patentability. The patent examiner and the Board are deemed to have experience in the field of the invention; however, this experience, insofar as applied to the determination of patentability, must be applied from the viewpoint of “the person having ordinary skill in the art to which said subject matter pertains,” the words of section 103. In finding the relevant facts, in assessing the significance of the prior art, and in making the ultimate determination of

the issue of obviousness, the examiner and the Board are presumed to act from this viewpoint. **Thus when they rely on what they assert to be general knowledge to negate patentability, that knowledge must be articulated and placed on the record.** The failure to do so is not consistent with either effective administrative procedure or effective judicial review. The board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.

Emphasis Added.

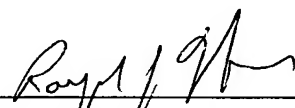
Thus, Applicants respectfully request a reference that motivates teaches or suggests selecting the methylene group of the present invention.

Applicants offer to provide the data of Enclosure 1 in the form of a Declaration if the Examiner deems it necessary.

Applicants are filing herewith a Terminal Disclaimer as requested by the Office Action over U.S. Patent No. 6,683,028.

Applicants believe the claims are in condition for allowance. Review and consideration of the claims and allowance are respectfully requested.

Respectfully submitted,

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Enclosure 1

Comparative Test Data

Le A 3s 444-US01/Mo6428D

Comparative test data

Example A**Aphis gossypii test**

Solvent: 7 parts by weight of dimethylformamide
Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cotton leaves (*Gossypium hirsutum*) which are heavily infested by the cotton aphid (*Aphis gossypii*) are treated by being dipped into the preparation of the active compound of the desired concentration.

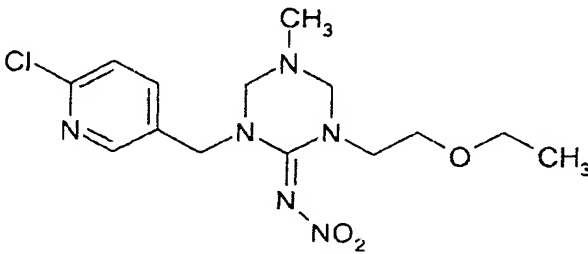
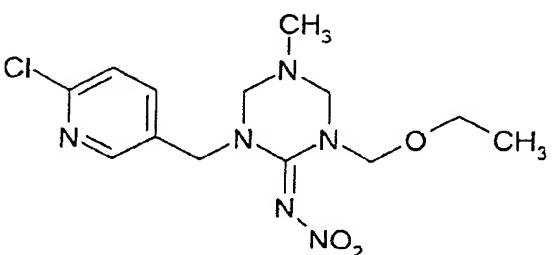
After the specified period of time, the mortality in % is determined. 100 % means that all the aphids have been killed; 0 % means that none of the aphids have been killed.

According to the present application in this test e.g. the compounds according to Ishimitsu et al. and the compounds according to the invention show the following insecticidal activity (Table A):

Le A 33 444-US01/Mo6428D

Comparative test data

Table A**Aphis gossypii** test

Compound	Concentration [ppm]	Mortality [%] after 6 days
Example 421 according to Ishimitsu et al. 	40	70
According to the invention 	40	98

Le A 33 444-US01/Mo6428D

Comparative test data

Example B**Myzus persicae - test**

Solvent: 7 parts by weight of dimethylformamide
Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) which are heavily infested by the green peach aphid (*Myzus persicae*) are treated by being dipped into the preparation of the active compound of the desired concentration.

After the specified period of time, the mortality in % is determined. 100 % means that all the aphids have been killed; 0 % means that none of the aphids have been killed.

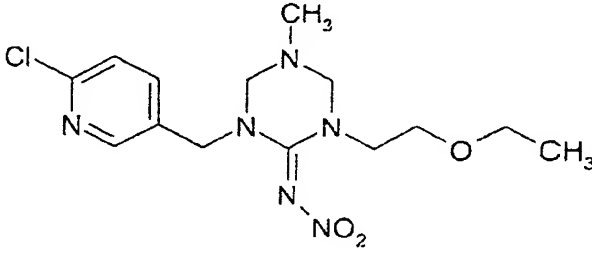
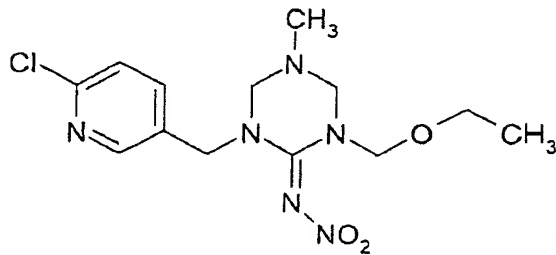
According to the present application in this test e.g. the compounds according to Ishimitsu et al. and the compounds according to the invention show the following insecticidal activity (Tables B1 and B2):

Le A 30 444-US01/Mo6428D

Comparative test data

Table B1

Myzus test

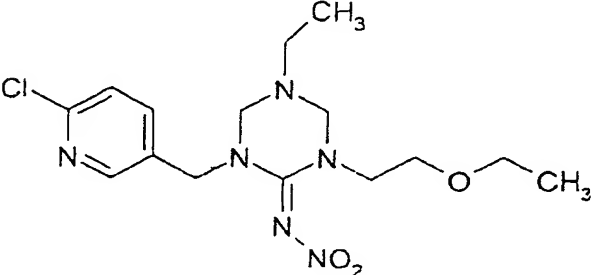
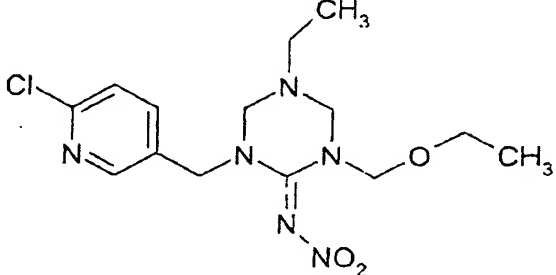
Compound	Concentration [ppm]	Mortality [% after 1 day]
Example 421 according to Ishimitsu et al. 	200	70
According to the invention 	200	98

Le A 33 444-US01/Mo6428D

Comparative test data

Table B2

Myzus test

Compound	Concentration [ppm]	Mortality [%] after 6 days
Example 422 according to Ishimitsu et al. 	40	10
According to the invention 	40	95

Le A 33 444-US01/Mo6428D

Comparative test data

Example C**Phaedon cochleariae larvae - test**

Solvent: 7 parts by weight of dimethylformamide
Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with mustard beetle larvae (*Phaedon cochleariae*) as long as the leaves are still moist.

After the specified period of time, mortality in % is determined. 100 % means that all the beetle larvae have been killed; 0 % means that none of the beetle larvae have been killed.

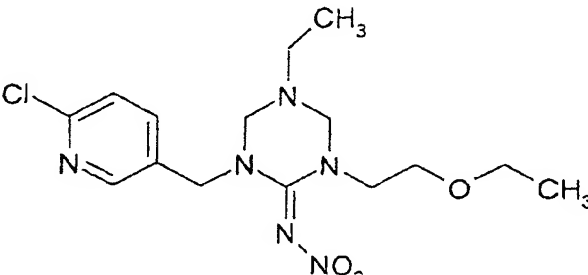
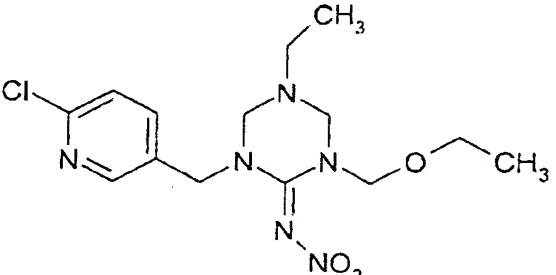
According to the present application in this test e.g. the compounds according to Ishimitsu et al. and the compounds according to the invention show the following insecticidal activity (Table C):

Le A 33 444-US01/Mo6428D

Comparative test data

Table C

Phaedon larvae test

Compound	Concentration [ppm]	Mortality [%] after 3 days
Example 422 according to Ishimitsu et al. 	1000	65
According to the invention 	1000	100

Le A 33 444-US01/Mo6428D

Comparative test data

Example D**Plutella xylostella - test (sensible strain)**

Solvent: 7 parts by weight of dimethylformamide
Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with larvae of the diamondback moth (*Plutella xylostella*/sensible strain) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed.

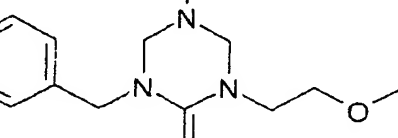
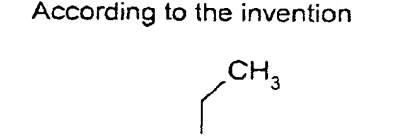
According to the present application in this test e.g. the compounds according to Ishimitsu et al. and the compounds according to the invention show the following insecticidal activity (Table D):

Le A 33 444-US01/Mo6428D

Comparative test data

Table D

Plutella test (sensible strain)

Compound	Concentration [ppm]	Mortality [%] after 3 days
<p>Example 422 according to Ishimitsu et al.</p> 	1000	0
<p>According to the invention</p> 	1000	30

Le A 33 444-US01/Mo6428D

Comparative test data

Example E**Plutella xylostella - test (resistant strain)**

Solvent: 7 parts by weight of dimethylformamide
Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with larvae of the diamondback moth (*Plutella xylostella*/resistant strain) as long as the leaves are still moist.

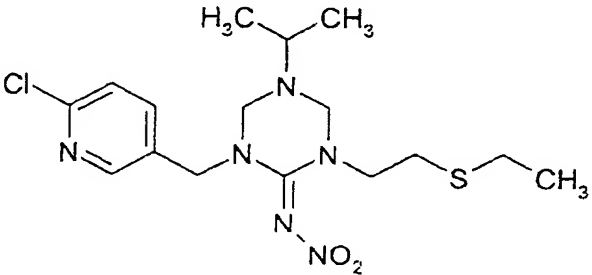
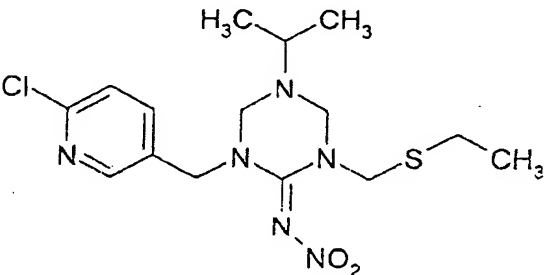
After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed.

According to the present application in this test e.g. the compounds according to Ishimitsu et al. and the compounds according to the invention show the following insecticidal activity (Table E):

Le A 33 444-US01/Mo6428D

Comparative test data

Table E**Plutella test (resistant strain)**

Compound	Concentration (ppm)	Mortality (%) after 3 days
<p>According to Ishimitsu et al.</p>  <chem>CC(C)N1CCN(C1CC2=CC=CC=C2C3=CC=CC=C3Cl)C(=N)N=O</chem>	1000	20
<p>According to the invention</p>  <chem>CC(C)N1CCN(C1CC2=CC=CC=C2C3=CC=CC=C3Cl)C(=N)N=O</chem>	1000	35

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